Mokelumne- Cosumnes Watershed Alliance
Modeling Sub-Team

Modeling Survey Form

For the purpose of coordinating regional modeling efforts to maximize resources and to assure consistency of modeling data and assumptions among regional modeling efforts, please provide the following information regarding your Agency/Organization's hydrologic and/or hydraulic modeling efforts in the Mokelumne-Cosumnes watershed and North Delta areas. A completed form is requested to be sent no later than **January 10, 2000** to Gwen Knittweis, CALFED/ 1416 Ninth Street, Suite 1148/Sacramento, CA 95814. OR, you may e-mail the completed form to gwenk@water.ca.gov (an e-mail version will be provided via the e-mail reflector) by January 10, 2000. Thank you.

Organization/Agency Name: **Contact Name/Phone Number:**

EBMUD   Jim Smith/209-365-1467

What hydrologic or hydraulic models do you use in the Mokelumne-Cosumnes and North Delta areas? If applicable, identify the associated study effort:

Model	Associated Study Effort
EBMUDSIM	EBMUD Water Supply Management Program
WQRRS	EBMUD Water Supply Management Program
HEC-1	FERC Emergency Action Plan
DBI (Dambreak Interface)	FERC Emergency Action Plan

For each model, identify the key questions the model is used to answer:

Model	Questions Addressed

EBMUDSIM- The model is used to simulate the operation of EBMUD's Pardee and Camanche reservoirs and estimate water yield under various hydrologic conditions and operating constraints.

WQRRS- The model is used to estimate the relative effects of varying hydrologic conditions and operating scenarios on reservoir release temperature.

HEC-1- The model is used to compute the probable maximum flood for the Upper

Mokelumne River Watershed.

DBI - The model is used to compute the outflow hydrograph resulting from a breach on Pardee Dam and/or Camanche Dam.

For each model, identify the geographic extent of the model and whether the model is capable of interfacing with GIS:

Model	Geographic Extent	GIS Interface (Y/N)
EBMUDSIM	Pardee and Camanche Reservoirs and lower Mokelumne River diversions and losses to the Delta	N
WQRRS	Pardee and Camanche Reservoirs	N
HEC-1	Upper Mokelumne River Watershed	N
DBI	Area Below Pardee Dam to Lodi	Y

For each model, identify data inputs used and the data source:

Model	Data Inputs	Data Source and Date
EBMUDSIM	Inflow to Pardee Reservoir	Mokelumne River at Hwy 49 gage
	Precipitation and evaporation	Camp Pardee gage
WQRRS	Reservoir bathemetry	EBMUD reservoir capacity survey
	Initial reservoir temperature profile	EBMUD water quality sampling data
	Flow into Pardee Reservoir	Calculated from EBMUD records of Pardee reservoir releases and change in storage.
	Daily temperature of Pardee Reservoir inflow	Highway 49 gage
	Hourly air temperature, dewpoint, atmospheric pressure, solar radiation, wind speed	EBMUD Pardee meteorological data
HEC-1	Watershed Sub-basin Boundaries	EBMUD GIS Staff
	Precipitation	From attached HEC-1 and DBI

		References: 1, 10-17
	Snow	From attached HEC-1 and DBI Reference 1
	Channel parameters	GIS based USGS Quad Maps, From attached HEC-1 and DBI Reference18
	Topography	GIS based USGS Quad Maps
	Reservoir storage & releases	From attached HEC-1 and DBI References2,4,8
	Hydrologic soil classifications	From attached HEC-1 and DBI Reference 9
DBI	Probable Maximum Flood	EBMUD Probable Maximum Flood Study – July 1999
	Topography	GIS based USGS Quad Maps
	Channel parameters	GIS based USGS Quad Maps, From attached HEC-1 and DBI Reference18, USBR Staff
	Reservoir storage & releases	From attached HEC-1 and DBI References2,4,8
	Breach parameters	FERC Engineering Guidelines, EBMUD 1993 DAMBRK Analysis

For each Model, identify modeling assumptions made (e.g. fixed boundary conditions, February 1986 flood event, etc.).

Model   **Modeling Assumptions**

EBMUDSIM –Reservoir operations are constrained by hydrology, water demand, water rights, agreements and court decrees, instream flow requirements, USCOE flood control requirements.

WQRRS- Reservoirs have long detention times and will stratify in the summer months.

HEC-1- Chose significant single-storm events from 1980-1998; For additional input parameters, refer to the PMF Study, July 1999 – EBMUD.

DBI -For Fair-Weather Scenario, assume average annual precipitation.

For each model, identify why this particular model used for this requirement in lieu of others (e.g. due to regulatory requirements, best technology for application, cost considerations, etc):

Model   **Basis For Choice**

EBMUDSIM- This proprietary model was developed specifically for EBMUD's Water Supply System because package models could not adequately represent the complexity of constraints on the system.

WQRRS- Widely accepted USCOE developed model. Model was appropriate for large stratified reservoirs such as Pardee and Camanche.

HEC-1- This model is widely used and is the FERC recommended model for PMF studies.

DBI- This model was used because of its GIS interface.

Other information or comments.